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THE TREATMENT WITH NISIN OF CHRONIC BOVINE MASTITIS CAUSED BY *STR. UBERIS* AND STAPHYLOCOCCI

BY

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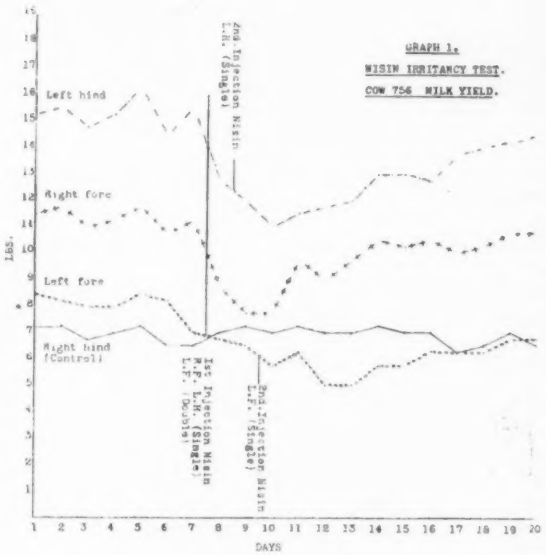
In 1949 Taylor, J. I., Hirsch, A., and Mattick, A. T. R., described the successful treatment of a number of cases of *Str. agalactiae* infection in bovine udders with nisin, an antibiotic prepared from *Str. lactis*. Results were also given of the single infusion of three udders infected with *Staph. aureus* with 2,500,000 units per quarter and, after 21 days, two out of three udders were found to be free from this infection. Following this report it was decided to investigate the effect of nisin upon *Str. uberis* and haemolytic staphylococcal infections in the field.

IRRITANCY TEST AND NISIN ASSAY METHOD

Taylor *et al.* also reported that nisin-in-oil produced irritant effects after the udder infusion of normal cows. These effects were overcome by the reduction of the particle size of the nisin until no appreciable loss of milk yield was observed. Following this report, it was decided to perform an irritancy test on a normal cow at the laboratory. The object of this test was to observe the effect of single and repeated doses of nisin in different quarters on the milk yield and to record any clinical changes. An assay of nisin in the milk from these quarters was also made by the following plate method: 200 ml. of nutrient agar was poured into a levelled plate, size 8 inches by 11 inches, to form the bottom layer. The top layer consisted of 150 ml. of 1·25 per cent. glucose nutrient agar to which had been added, before pouring, 1 ml. of an overnight peptone broth culture of *Str. agalactiae*. Standard nisin was obtained containing 30,000,000 units per gramme. With this a stock solution of nisin containing 3,000 units per ml. was prepared in sterile glass-distilled water. Halving dilutions of standard were made from 1,500 to 11·5 units per ml. The standard dilutions and the unknown samples were placed on the surface of the medium using "fish spines" (porcelain cups) (Stewart, E. A., & Thorp, R. H.). The prepared plate was transferred to the refrigerator at 4° C. for 18 hours and then removed and incubated at 37° C. for 24 hours. The diameters of the circles of inhibition were plotted against the logarithm of the units of the standard.

The cow (No. 756) used for the preliminary irritancy test was in mid-lactation and the right hind quarter was not injected with nisin. Milk from this quarter contained *Str. uberis* and was the cause of the low milk yield from the quarter (Graph 1). The right fore quarter was injected with one tube (2,500,000 units, 0·125 g.) of nisin and the left fore quarter received an initial injection of two tubes of nisin, followed by 2,500,000 units 48 hours later. The left hind quarter was given an initial injection of one tube and a further injection 24 hours later. All injections were made after the morning milking, the initial treatments being given on the same day.


GRAPH 1.
NISIN IRRITANCY TEST.
COW 756 MILK YIELD.
Left hind
Right fore
Left fore
Right hind (Control)
LBS.
DAYS
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

Fore-milk samples were taken twice daily for nisin-assay. Results showed that 24 hours after the injection of one tube of nisin (left hind and right fore quarters) 1 ml. of fore-milk contained approximately 83 units of nisin. Forty-eight hours later the amount of nisin in samples of fore-milk varied from 15 units per ml. to a trace. The left fore quarter received three tubes within a period of 48 hours and nisin could be detected in samples taken up to four and a half days after the last injection. The levels of nisin found in the afternoon milk samples from the injected quarters were generally lower than the corresponding morning samples.

The conclusion that nisin was detectable up to 48 hours after a single injection was confirmed in the field trials. No clinical changes were seen in the injected quarters and these quarters remained free from bacterial infection. Graph 1 indicates that there was an appreciable drop in milk yield during the first 48 hours after injection and that the yield was further depressed by a subsequent injection. Quarter milk yield recording was performed for 13 days after the injections and it will be noted that the milk yield of two out of the three quarters had not returned to the pre-treatment level by the end of this time.

EXPERIMENTAL HERDS

Two herds infected with *Str. uberis* and one with haemolytic staphylococci were selected for treatment. Herd

" A " consisted of 43 pedigree Guernsey cows; eleven quarters of eight cows were known to be infected with *Str. uberis*. Five of these cows had become infected since routine bacteriological examination of the herd was begun in December, 1947, and all of them had been treated on different occasions with penicillin. The herd was kept under ideal conditions and milked by bucket plant. Herd " B " comprised 52 pedigree Guernsey cows, four of which had one quarter each infected with *Str. uberis;* one cow had been treated previously with penicillin. The herd was kept under good conditions and milked in an auto-recorder milking parlour. Herd " C " was a herd of 55 pedigree Jersey cows; 14 quarters of eight cows were infected with haemolytic staphylococci. Clinical mastitis had developed in many of the cows in past lactations and penicillin had been used extensively on different occasions. The cows were milked by bucket plant, and although the approaches to the sheds and yard were often very muddy, the milking sheds were kept in a clean condition.

Method of Sampling and Bacteriological Examination

The herd under examination was subjected to a preliminary screening test by plating 0·1 ml. bulk fore-milk samples from each cow on plain blood agar plates; after incubation at 37° C. for 18 hours the plates were examined. *Str. uberis* was identified by microscopical, cultural and biochemical tests. Staphylococci were considered to be pathogenic if they were Beta or partially haemolytic and were coagulase-positive by the slide test (Velilla, D. M., Faber, J. E., & Pelczar, M. J.); coagulase-negative colonies, whether partially haemolytic or non-haemolytic, were disregarded. A second test was made one week later. Quarter-samples were taken from all the cows whose milk contained *Str. uberis* or haemolytic staphylococci at the first test, whereas bulk-samples only were examined from those cows giving negative reactions at the first test. After a further week, quarter-samples were taken from all those cows whose milk showed the presence of pathogens in the second bulk sample. All the cows in the herds were sampled at least twice before treatment was begun and only cows that were positive on two occasions were treated. Organisms other than *Str. uberis* and haemolytic staphylococci are not recorded in the tables, although other species were sometimes isolated.

Method of Treatment

After the afternoon milking the teats of the infected quarters were cleansed with " Cetavlon," and the quarters injected with one tube each of nisin (2,500,000 units). Samples of the fore-milk were taken before milking on the day of treatment for testing purposes. No immediate irritant effects were observed in the treated quarters, except that in a few cases on the second or third morning a small number of clots were seen which presumably were caused by the nisin injection. Fore-milk samples from the treated quarters were taken daily for one week for bacteriological examination and nisin assay. During the period of nisin assay care was taken to cleanse the teats with methylated spirit instead of " Cetavlon " in order to avoid the possibility of carrying over the latter into the milk samples and thereby producing inhibition on the culture medium. Further bacteriological examinations were made at about monthly intervals for four or five months.

RESULTS OF TREATMENT

Herd " A " (*Str. uberis*) (Table I)

In this herd 14 quarters, eleven of which were infected with *Str. uberis*, were injected with nisin. Cows A1 and A4 were infected in two and three quarters respectively and all quarters in these cows were treated. In the majority of quarters more than 200 organisms were present on each plate. During the first week of post-treatment sampling *Str. uberis* was isolated in large numbers from two quarters of Cow A4 and these were re-treated with one tube of nisin each, nine days after the initial treatment. This cow was being " dried off " at the time of treatment and some difficulty was experienced in completing this. Seven weeks after the first treatment samples from Cow A4 were taken six days before calving and infection was again found in three quarters, two of which had been already re-treated with nisin. Five days after calving all quarters were injected with two injections each of 200 mg. aureomycin in oil at an interval of 48 hours. This cow remained negative at subsequent tests up to four months after the aureomycin injections.

Cow A1 was not in lactation at the time of treatment and samples were not taken until five weeks later, nine days before calving. Large numbers of *Str. uberis* were recovered from three quarters, the left hind being a new infection. Re-treatment with nisin was performed two days before calving. Two weeks later the right hind quarter was still infected and all quarters were injected with two tubes of nisin each at an interval of 24 hours. Four months after the initial treatment the right hind quarter showed a light infection with *Str. uberis* and four weeks later infection was present in both hind quarters. All other injected quarters (five) in this herd remained free from *Str. uberis* infection from the time of treatment until the last test five months later. One cow was free from infection when sold after four months.

Nisin assay was made on milk samples from nine quarters for eight days after treatment; in four quarters a measurable amount was detected up to 72 hours after injection.

Herd "B " (*Str. uberis*) (Table I)

Four quarters were treated in this herd, one quarter only in each cow being infected. All cows remained free from infection during the first week of post-treatment sampling. Re-infection was not detected until ten weeks had elapsed, when *Str. uberis* was isolated from Cows B3 and B4. Re-treatment with nisin was not performed. Cows B1 and B2 remained free from infection up to 13 weeks after treatment. Nisin assay results were similar to those for Herd " A."

Herd " C " (Haemolytic staphylococci) (Table I)

Fourteen quarters in eight cows infected with haemolytic staphylococci were injected with nisin. Treatment was only partially successful and staphylococci were found during the first week of post-treatment sampling in half of the treated quarters. After 14 weeks six quarters were found to be negative for staphylococci; with the exception of the left hind quarter of Cow C1 the number of cocci per ml. of milk present before treatment had not been large, however, and this fact may have some bearing on the result. In most of the heavily infected quarters the staphylococcal population returned to the pre-treatment level. From the clinical aspect, however, an improvement had been effected and Cow C1 was the only case in which mastitis had been observed since treatment. This cow,

TABLE I

HERD A. *Str. uberis*. TREATED 22.5.50

Cow	No. of calves	Infection first detected	Quarter	Pre-treatment sampling	Post-treatment sampling: From 23.5.50 to 30.6.50		13.7.50		26.10.50	Nisin assay (units per ml.): 1st day	2nd day	3rd day	4th day
										23.5.50	24.5	25.5	26.5
A1	5	25.11.47	R.F.	+++	+++	R.T.	0	R.T.	0		Not sampled		
			R.H.	+	+++		+++		+++				
			L.F.	0	0		0		0				
			L.H.	0	+++		0		++				
A2	5	25.11.47	R.H.	+++	0		0		0		Not sampled		
A3	5	1.12.47	L.H.	+++	0		0		0	1,500	93·5	31	+ Tr.
A4	9	1.12.47	R.F.	+++	0		0		0	1,500	114·8	16	+ Tr.
			R.H.	+++	+++	R.T.	+++	A	0	187·5	23·5	+ Tr.	0
			L.F.	0	0		+++		0	446·7	93·5	11·5	+ Tr.
			L.H.	+++	+++	R.T.	+++		0	446·7	46·5	Tr.	— Tr.
A5	7	1.12.47	R.F.	+++	0		0		0	154·9	11·5	+ Tr.	— Tr.
A6	2	20.4.49	R.F.	+	0		0		0	446·7	29	+ Tr.	Tr.
A7	2	27.5.49	R.H.	+++	0		0		0	187·5	29	16	Tr.
A8	3	24.4.50	L.F.	+++	0		0		Sold	1,047	93·5	+ Tr.	Not sampled

HERD B. *Str. uberis*. TREATED 24.7.50

					From 25.7.50 to 31.8.50	5.10.50	26.10.50	25.7.50	26.7	27.7	28.7
B1	6	24.10.49	R.F.	++	0	0	0	1,259	92·5	58·9	Tr.
B2	5	3.7.50	R.H.	+++	0	0	0	574	46·5	Tr.	Tr.
B3	2	3.7.50	R.H.	+++	0	+++	++	574	92·5	23·5	Tr.
B4	5	17.5.50	R.H.	+++	0	+++	+++	1,259	31·6	+Tr.	Tr.

HERD C. HAEMOLYTIC STAPHYLOCOCCI. TREATED 19.6.50

					From 20.6.50 to 27.6.50	3.8.50	26.9.50	20.6.50	21·6	22·6	23·6
C1	12	4.3.49	R.F.	+++	+	+	+++	158·5	+ Tr.	Tr.	Tr.
			R.H.	+++	+	++	++	187·5	+ Tr.	Tr.	Tr.
			L.H.	+++	0	0	0	158·5	+ Tr.	Tr.	Tr.
C2	6	27.9.49	R.F.	+++	+	+++	0	162·2	23·5	0	0
			R.H.	+	0	0	0	416	16·6	+ Tr.	0
			L.F.	+	0	0	+	187·5	16·6	+ Tr.	0
C3	4	3.10.49	R.H.	+	+	++	+	224	60·3	+ Tr.	0
			L.H.	+	+	0	0	309	46·5	Tr.	0
C4	5	3.10.49	L.F.	+	0	0	0	75·9	75·9	Tr.	0
			L.H.	++	++	+++	+	375	257	187·5	Tr.
C5	8	3.10.49	R.H.	+++	0	+	+	104·7	16·6	0	0
C6	4	18.11.49	L.H.	+++	0	+++	+++	162·2	23·5	Tr.	0
C7	11	17.1.50	L.F.	++	+	0	0	187·5	Tr.	0	0
C8	4	15.6.50	R.F.	++	0	0	0	187·5	131·8	11·5	Tr.

0 = Negative for *Str. uberis* or haemolytic staphylococci.
\+ = Up to 50 *Str. uberis* or haemolytic staphylococci per 0·1 ml. milk.
++ = 50 to 200 " " " "
+++ = Over 200 " " " "
R.T. = Re-treated with nisin.
A = Re-treated with aureomycin.
Tr. = Trace reaction.

like Cow C7, was of advanced age and she was known to have had mastitis in different quarters for at least the last six lactations. There was a considerable amount of induration present in her quarters and this might account for the fact that treatment was not successful.

Results of nisin assay were similar to those obtained for the other herds.

Effect on Milk Yield.—Total weekly milk yields from the treated cows were recorded for the two weeks before treatment, the week of treatment and for the two weeks after. These figures are the totals of routine daily milk weighings in each herd and they are shown in Table II. It will be observed that in the majority of cases, although only one quarter was injected with nisin, there was a depression in the milk yield during the week of treatment and that in several cows recovery to the pre-treatment level of milk yield had not occurred two weeks after treatment was concluded. This depression in the yield may be partly accounted for by the daily interference with the cows during milk sampling, but it is possible that nisin also exercised some depressant influence.

Table II

Milk Yields in lbs. of Cows treated with Nisin for Weeks Before, During and After Treatment

Herd	Cow	Quarters treated	Two weeks prior to treatment		Week of treatment	Two weeks after treatment	
A	A3	1	221	194	179	220½	218½
	A4	4	99½	88¾	49¾	Dry	
	A5	1	264¼	252¼	238¾	261¼	253¾
	A6	1	218¾	219	195¼	209	202¾
	A7	1	311¾	274¼	218½	230	227¾
	A8	1	88¼	77½	71½	85	67½
B	B1	1	177¼	181½	173¼	168½	169
	B2	1	220½	226½	204¼	202	204½
	B3	1	235½	234½	246½	232	234
	B4	1	208½	233¼	209¼	201	212½
C	C2	3	121¾	115½	106	88¾	81¾
	C4	2	162½	167¼	158½	145½	139
	C5	1	270½	254	259½	239½	227
	C6	1	263½	255¾	228¾	205½	202½

Discussion

A single injection of 2,500,000 units of nisin appears, therefore, to have been successful in removing *Str. uberis* infection for the whole period of observation of five months in seven out of ten cows in two herds where the infection was in a single quarter. The treatment was not successful in cows where more than one quarter was involved even when re-treatment with a larger dose of nisin was made. The possibility of re-infection from one quarter to another must be taken into account when considering the failure of the multiple quarter infections to respond to nisin.

In the case of staphylococcal infections five of the treated cows were found to be harbouring haemolytic staphylococci in one or more quarters 45 days after nisin treatment. It was not determined whether this was a reappearance of infection in the treated quarters or a re-infection of the quarters from outside sources. At the end of 14 weeks six of the seven quarters which were negative at 45 days remained negative and this would seem to indicate that some improvement had been made. In order to reduce the possibility of re-infection of treated quarters it would seem to be necessary to inject all quarters of infected cows with nisin. This was not possible in this experiment.

Summary

(1) A single injection of the antibiotic, nisin, was used to treat 15 infected and three normal quarters of cows infected with *Str. uberis* and 14 quarters of cows infected with haemolytic staphylococci.

(2) In one herd, five quarters were free from infection with *Str. uberis* with no further treatment up to five months and one quarter was free when the cow was sold at four months after injection. One cow did not respond to two re-treatments with nisin and another responded to aureomycin injections after nisin re-treatment had failed.

(3) In the second herd, two quarters were free from infection after 13 weeks and two quarters were not re-infected until ten weeks after treatment.

(4) In the third herd, seven quarters infected with haemolytic staphylococci did not respond well to nisin treatment and 50 per cent. of treated quarters were re-infected within one week. Six quarters remained free from infection up to three months after treatment.

(5) Some depression in the milk yield during the week of treatment was recorded.

Acknowledgments.—We wish to thank Dr. A. Hirsch for a supply of standard nisin and for suggestions on the method of assay.

A small quantity of nisin-in-oil in tubes for intramammary infusion was made available to us by the Agricultural Research Council.

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EASTBOURNE: N.V.M.A. CONGRESS HOST-TOWN

[Contributed]

It is unlikely that many of the members of the Association and their ladies who will be attending this year's Congress in September will be strangers to its host-town, Eastbourne, but a reminder of its manifold attractions will be regarded as timely, while it affords the writer the opportunity of assuring them that this charming resort is indeed delighted to act in that capacity and extends a sincere and cordial welcome to each.

Eastbourne is situated at the foot of the rolling Sussex Downs, and overlooks the English Channel. Nature has been particularly kind in bestowing upon this clean, modern town both a wonderful climate and lovely scenery, which, combined with a striking range of entertainments, make Eastbourne a delightful holiday centre at all times of the year.

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Beach and Pier.

The eight miles of coastline offer an unsurpassed variety of scenery, ranging from broad expanses of gently sloping beach at the easterly end, to spacious promenades, charmingly laid out with flower gardens and lawns in the centre, and rising slowly westwards to the Downs and Beachy Head towering 600 feet above the sea.

And just as the scenery varies, so, too, do the facilities for entertainment and enjoyment. The beach provides safe sea bathing, rowing, sailing, water novelties of every kind, and acres of golden sands. On the pier, with its numerous amusements, resident stage show and ballroom, the most famous military bands in the country play daily from Easter until October in the Promenade Bandstand, where seating is available for 3,000 people.

Orchestral and celebrity concerts, cabaret and revues, West End plays and first-class variety programmes, all feature regularly at the three theatres, whilst there are seven cinemas presenting the latest from filmland.

The sports lover will find a remarkable variety of activities catering for every holiday mood and taste, and within the borough are no less than three first-class 18-hole golf courses, 60 tennis courts (hard and grass) and 12 bowling greens. Putting, swimming, squash, badminton, fishing, model yachting, and riding can all be enjoyed in ideal surroundings, whilst the County Cricket Ground at the Saffrons is renowned as having one of the most picturesque settings on the South Coast.

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THE CARPET GARDENS, GRAND PARADE.

Eastbourne abounds in parks and gardens where many a quiet hour can be spent amongst the tens of thousands of lovely blooms that are planted out annually for the enjoyment of visitors. Children are especially cared for, and for their especial pleasure has been established the Children's Corner in the Devonshire Park Gardens. In other parts of the town are model yacht and paddling pools, whilst a special children's show is provided every morning at the Redoubt Open-Air Theatre during the summer months. The town's Calendar of Events is packed with something of interest for everyone, and annual features are the County Cricket Week, Open Bowls Tournaments, Motor Rallies, Tennis Championships, Dance Festival, Championship Dog Show, Horse Show, Regatta and Navy Week.

H. D. Kevor, Sutton

BEACHY HEAD CLIFFS AND LIGHTHOUSE.

Eastbourne is also an excellent centre for touring, for the surrounding country enshrines innumerable places of historical interest, quaint hamlets and peaceful Sussex villages. Roman, Norman and Tudor buildings, well preserved, are to be found everywhere through the county. Places like Pevensey with its Castle, Old Mint House (and, incidentally, the smallest Town Hall in the country), Herstmonceux, home of the Royal Observatory, Battle Abbey, built by William the Conqueror, and the county town—Lewes—will all handsomely repay a visit.

In Eastbourne, then, with its gay atmosphere yet quiet charm, the Conference surely will be a happy and successful one; it is earnestly to be hoped that due devotion to the business sessions will yet afford the delegates ample opportunity to enjoy the lighter pleasures it has to offer.

CLINICAL COMMUNICATION

THE ISOLATION OF *SALMONELLA DUBLIN* FROM AN OUTBREAK OF DYSENTERY IN PIGS

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In July, 1950, an outbreak of dysentery amongst pigs was investigated, 17 pigs, aged approximately 12 to 16 weeks, having died during the previous two months. Clinical examination showed that pyrexia was not marked; the temperatures of nine of the worst affected pigs ranged from 103·2° to 104·5°. Diarrhoea was evident; the faeces contained mucus and in most cases showed traces of blood. The pigs looked dejected and showed marked inappetence.

Two pigs were examined *post-mortem* at the Laboratory. In both specimens changes of a necrotic nature were found, involving the caecum and the large intestine. Gastro-enteritis and pneumonia were also evident.

Cultures were prepared from the stomach, small intestine, caecum, large intestine and rectum in selenite F selective medium. These were incubated for 12 hours and then plated on desoxycholate-citrate agar. Biochemical examination of lactose negative colonies from the small intestine, caecum and large intestine indicated a salmonella organism. Cultures were submitted for serological examination to the Public Health Laboratories, Belfast, where Doctor C. R. Murdock, the Bacteriologist, identified the organisms as *Salmonella dublin*.

Treatment, using sulphamezathine sodium solution, 33⅓ per cent., was commenced on the strength of a provisional diagnosis of paratyphoid before completion of bacterial examination. The sulphamezathine was given intramuscularly into the ham region, using a dose of 30 c.c. per 100 lb. bodyweight. In most cases two injections proved sufficient and in less than a quarter of the cases treated was a third or subsequent injection necessary. In all, over 100 pigs were treated; in some cases breakdowns did occur, but response to remedication was immediate—in some this was given orally, using the 33⅓ per cent. solution at the same rate as for injection, with excellent results.

While *Salmonella dublin* is well known as a pathogen in cattle and as cause of food poisoning in humans, no reference to its isolation from pigs has been found in either British or American literature.

PROFESSOR JOHN GEORGE WRIGHT, M.V.Sc., F.R.C.V.S.

President of the Royal College of Veterinary Surgeons, 1951-52

In a previous issue of this journal the election of Professor J. G. Wright, M.V.SC., F.R.C.V.S., as President for the year 1951-52 was reported.

Professor Wright brings with him an impressive record of devoted service to the Council of the R.C.V.S. and the profession at large. The period through which the Royal College has just passed, culminating in the Veterinary Surgeons Act of 1948 and the granting of registrable veterinary degrees to Universities, may well prove to have been one of the most critical in its existence. There are still problems arising from the Act which remain to be solved, but in general we look forward to an era of consolidation. Professor Wright is undoubtedly the right choice for this high office at this time for his unbounded faith in the future of the R.C.V.S., with its new and heavy responsibilities, and his profound understanding of the needs of the profession will exert a steadying but inspiring influence on its proceedings. Within the Council he has always expressed his opinions without fear or favour and with enthusiasm and conviction. His colleagues may sometimes have disagreed with him, but they always listen to what he has to say with the greatest attention and respect for they know that his proposals are put forward in an entirely disinterested spirit and with the sole intention of enhancing the value, status and dignity of the profession, whose interest he has so much at heart. For this reason he commands the absolute confidence of the Council.

John George Wright, who was born in September, 1897, was educated at the Newport (Mon.) High School and served with the Royal Artillery in France and Flanders in the 1914-1918 war. He entered the Royal Veterinary College in 1919 and graduated in 1923 after a brilliant college career in which he was awarded many prizes and medals, including the Fitzwygram and Williams Prizes. In 1929 he obtained the Fellowship Diploma of the R.C.V.S. From 1923 to 1928 he was engaged in general practice, mainly in South Wales. It was this experience which showed him how great were the deficiencies in surgery and anaesthesia and doubtless created within him the urge to find facilities which would allow him to develop his ability for devising new techniques and raising the standard of veterinary surgery in this country. In 1928 he accepted the Chair of Materia Medica in the Royal Veterinary College, London, and subsequently transferred to the Chair of Veterinary Surgery. Those privileged to see him at work at the Beaumont Animal Hospital between 1929 and 1939 cannot fail to have been inspired by his unbounding energy, enthusiasm and skill in dealing with the large number of animals brought to the Clinic. Up to this time Professor Wright's interest lay mainly with small animals and horses; the London college provided little else. Then came the second world war and the evacuation to Streatley-on-Thames. Freed from his responsibilites for the treatment of dogs and cats, Professor Wright turned his attention to farm animals, and with his colleagues laid the foundations of the first Field Station which has now become an important feature of all our veterinary schools.

In 1941, on the retirement of Professor Share Jones, he accepted the invitation to transfer to the University of Liverpool. The transition took place during the most critical period of the war; moreover, he was faced with the great responsibility of advising the University on the future development of the school, and in particular the creation of a Field Station in rural surroundings.

Professor Wright was elected to the Council of the R.C.V.S. in 1938, and has taken a prominent part in its activities, particularly on the Examination and Education Committees. He became Vice-President in 1949.

He has shown much interest in the Divisions of the N.V.M.A. He was President of the Central Veterinary Society and twice held that office in the Lancashire Division, playing a large part in the successful organisation of the Annual Congress at Southport in 1948. During his service at the Royal Veterinary College he took an active interest in Comparative Pathology and was Secretary of the Section of Comparative Medicine of the Royal Society of Medicine from 1932-1934. In recent years he has turned his attention to veterinary education in the Colonies and as Veterinary Representative of the Inter-University Council for Higher Education in the Colonies he has visited East and West Africa and the Sudan and has given valuable advice on veterinary colleges in these areas.

The profession owes many of its standard surgical and anaesthetic procedures to his enquiring mind and surgical dexterity. His contributions to veterinary surgery are to be found in many published articles and in some valuable text-books. His style is marked by that personal touch without which he would not consider a text-book worth writing; almost every page contains information which he has himself obtained by careful operation or dissection. He has been a joint editor of the *Journal of Comparative Pathology and Therapeutics* since 1943 and has acted as Chairman of its Editorial Board. He also assisted the N.V.M.A. in preparing its handbook on Euthanasia. For his contributions to the art and science of veterinary surgery he was awarded the Dalrymple-Champneys Cup and Medal by the N.V.M.A. and the "Victory" Medal by the Central Veterinary Society in the same year. At the last meeting of Council, R.C.V.S., he received the Livesey Medal.

The affairs of the Royal College are in safe hands. Professor Wright, as President, will have the full support of his colleagues on the Council and of the whole profession. His many friends and admirers, including a whole generation of his students, will wish him a most successful year of office.

BILL TO PROHIBIT SPRING TRAPS

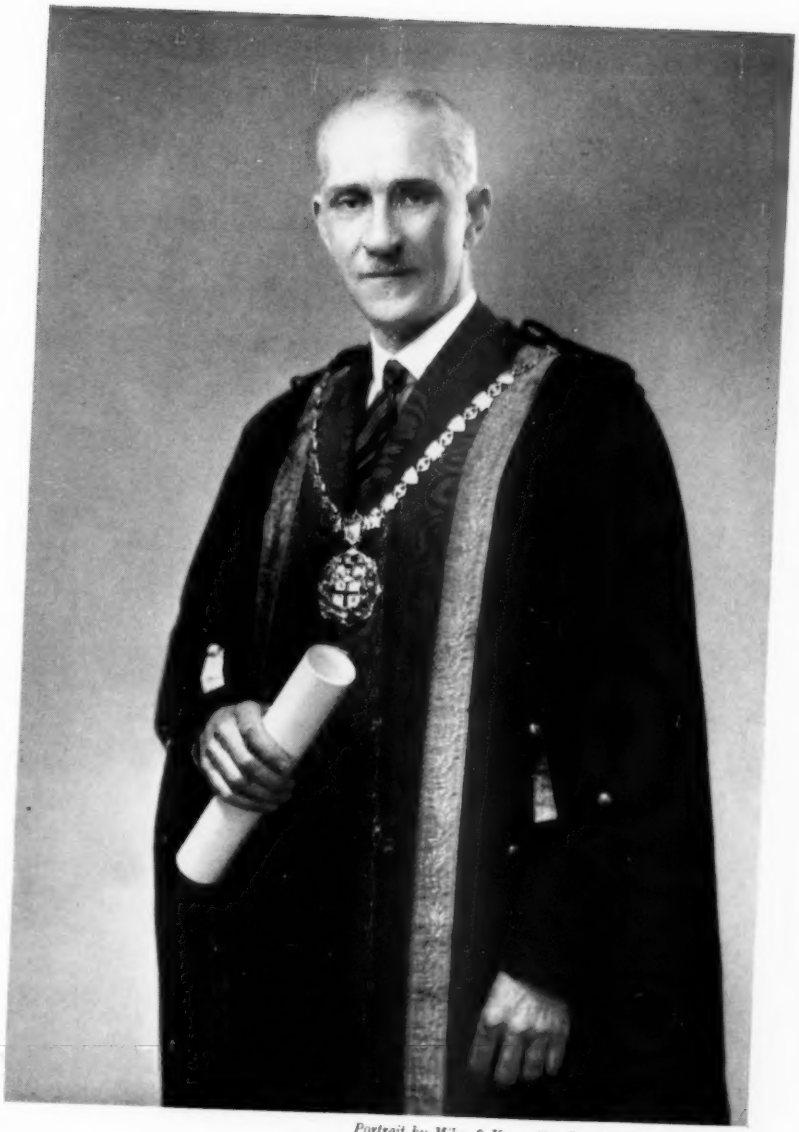
The Spring Traps Bill, the text of which was issued last week, proposes to prohibit the manufacture, sale, use or possession of spring traps likely to cause unnecessary suffering. The provisions extend to all spring traps except those approved by the Minister of Agriculture or intended only for exhibition purposes. Penalties imposed by the Bill range from a maximum fine of £5 for a first offence to £25 or three months' imprisonment, or both, for a subsequent offence. It is a private member's Bill introduced in the House of Lords by Lord Elton.

* * * * *

The working party on precautionary measures against toxic chemicals used in agriculture, whose first report was published in April, 1951, has been asked by the Ministers concerned to enquire whether any risks arise from the point of view of the consumer of the final product, in the use of toxic chemicals in agriculture and in the storage of food, and to make recommendations for protective measures should these appear to be desirable.

* * * * *

The Royal Sanitary Institute announce that the Parkes Museum of Hygiene, 90, Buckingham Palace Road, London, S.W.1, will be closed for repairs and redecoration until further notice.



Portrait by Miles & Kaye, 100, Southampton Row, W.C.1

PROFESSOR J. G. WRIGHT, M.V.SC., F.R.C.V.S.

President, Royal College of Veterinary Surgeons, 1951-52

REVIEW

[**Veterinary Obstetrics.** Franz Benesch and John G. Wright. Pp VIII & 470 with 244 illustrations. Baillière, Tindall and Cox, London, Price 50s.]

This book now consists of three parts. Part II comprises the original Benesch's Veterinary Obstetrics, the translation of which was so ably edited by the author of Parts I and III. The additional text has produced a much more comprehensive treatise on veterinary obstetrics and gynaecology.

Chapter I deals with the oestrus cycle of the mare, cow, ewe, sow, bitch and cat, and the three subsequent chapters concern themselves with the developmental changes of pregnancy and its recognition in the mare, cow and bitch. Biological and chemical tests of equine pregnancy are given in detail for those interested in laboratory methods. Chapter 5 is given to parturition with the three stages of labour discussed at some length in respect of the mare, cow and bitch. The chapters on maternal and foetal dystokia in themselves form a useful introduction to Part II of the book, and the advice given on how to approach an obstetrical case will be welcomed by all and not least by young graduates.

Part II by Benesch remains unaltered. Since its translation, this book has been accepted by English-speaking veterinarians as a standard work. The manipulative processes for the correction and delivery of the foetus, based on sound anatomical and mechanical principles and so perfectly illustrated, can never be more lucidly explained. Chapters 22 to 27 deal in an equally excellent manner with embryotomy. Section of the foetus, whether partial or complete, must be conducted on methodical and orthodox lines if the operator's energy is to be conserved, time saved and the mother spared from injury and exhaustion. The author deals with his subject with the welfare of the patient continuously in mind. Instruments of section are described and the figures illustrating dismemberment of the foetus render reference to the text almost unnecessary.

Part III commences appropriately with caesarean operations, their indications and implications. The descriptive manner of the surgical techniques involved clearly indicates the experienced hand and the well-trained eye. These chapters will be of incalculable value to those who have not as yet embarked on their first gynaecological operation.

Retention of the foetal membranes in cattle and their treatment will always provoke discussion and diversity of opinion. The author discusses this problem in the bovine and other species in a most logical and dispassionate manner. The chapter on foetal mummification could have been made more complete by references to the partially resorbed foetus which is expelled, in oestrus, approximately at mid-term, so common in Channel Island cattle, particularly the Jersey. Parturient perineal injuries, particularly the cloacal form, are not easy to repair and despite the pictorial efforts on the part of the author, it cannot be said that the techniques of repair show such a lucid approach as the other surgical interferences in the book. It is difficult to associate Fig. 233 with the repair of the lesion under consideration.

The problem of infertility, especially in the cow and mare, is immense, and in Chapters 35 to 39 the author has surveyed the question with some singleness of purpose and has succeeded in putting it in its right perspective. All the commonly encountered factors receive attention, and *Trichomonas foetus* infection is admirably covered. In the next edition of the book it is more than likely that *Vibrio foetus* infection will claim more space.

This book will be appreciated by all as a welcome addition to clinical veterinary literature. That there are omissions is acknowledged by the author in the preface, but they are not of a serious nature. The new material represents a newly born lusty infant. Its growth and nurture will be watched closely and new editions, for which readers will continuously call, will see it attain full stature. The original Benesch was essentially for the large-animal obstetrician. The present book must give eminent satisfaction to the small-animal practitioner, who can no longer feel that he has been neglected in this field. The book is written in an easy readable style, and both authors and publishers are to be congratulated on its presentation.

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Also received :—

" A Handbook of Sex Education." By Theodore Faithfull, M.R.C.V.S. Published by Rylee, London and Birmingham. Price 8s. 6d.

" Control of Life." By Halliday Sutherland. Published by Burns, Oates & Washbourne, Ltd. Price 15s.

SOCIETY FOR THE STUDY OF FERTILITY

In its issue of July 7th the *British Medical Journal* records that the Society for the Study of Fertility held its second annual conference on Fertility at Girton College, Cambridge, on June 20th and 21st. During the four sessions a series of papers was given, ranging over the scientific, medical and veterinary aspects of the subject.

Animal Studies

Dr. M. Maqsood (School of Agriculture, Cambridge) produced striking evidence of the effect of thyroid hormone administered in optimal physiological doses on the onset of sexual maturity, libido, semen production, and the spermatogenesis in mice, rabbits and rams; thiouracil, in contrast, had an equally marked deleterious effect. Thyroxine therapy prevented decline in fertility in the ram and greatly improved the libido, semen qualities, and spermatogenesis of buck rabbits which before treatment had shown very poor libido and deterioration in semen qualities.

Miss H. M. Bruce and Dr. G. C. Kennedy (National Institute for Medical Research, Mill Hill) reported their observations on the effect of experimental lesions in the hypothalamus on the oestrous cycle and mating behaviour of the female rat. If after operation the rat became obese, its cycle might remain undisturbed but mating never occurred; if the lesion did not cause obesity, mating and normal pregnancy might follow. Lesions produced in lactating rats did not necessarily interfere with lactation, even though obesity resulted.

Dr. H. J. Cembrowicz (Somerset Cattle Breeding Centre, Ilminster) described work on the fertility levels of bulls at a cattle artificial insemination centre.

Dr. B. P. Wiesner and Professor John Yudkin (King's College of Household and Social Science) reviewed their previous findings, which indicated that a nutritional factor (" R ") present in the liver was necessary for normal gestation and lactation in the rat, and for survival of the young; in its absence there was almost always death of the young within two days of birth. They now produced further evidence showing that vitamin B_{12} had some effect in correcting this dietary lack, but it did not seem entirely to replace " factor R." It had been shown that " factor R " was necessary both for the viability of the young and for normal gestation and lactation of the mother. Liver was not the only source of the factor, since the stock diet, containing no liver, allowed good reproduction which was not improved by adding liver.

* * * * *

Weekly Wisdom

The real battle is with inherent evil rather than with social conditions.—The late (S.A.) Commissioner C. Lamb

ROYAL COLLEGE OF VETERINARY SURGEONS

MEMBERSHIP EXAMINATIONS, JUNE/JULY, 1951

List of Successful Candidates

(*Continued from page* 472)

Edinburgh:

FIRST EXAMINATION

Baird, J. S. (C)
Barnes, Miss P. C.
Black, Hugh
•Borthwick, Ramsay
•Cathcart, R. A.
Christie, R. F. (C)
•Couttie, Peter
Dickson, James (C)
Findlay, C. R.
Garwood, P. J.
Gyi, K. K.
Howells, G. J.
Imlah, Peter (B)
Irving, Miss P. M.
†Jones, D. F.
Jones, J. S. L. (C)
Kay, H. R. M.
•Levack, Miss M. E. S.
McIntosh, S. A.
•Mackenzie, R. M.
Parminter, D.
Paterson, R. C. G.
•Podd, G. H.
Poole, Anthony
Prior, J. G.
Spence, J. B.
Steele, R. B. T.
Taylor, J. C. (C)
Teale, P. C.
Tennant, L. D.
Watt, I. M. (C)
Weaver, A. D. (C)
•Williams, G. L.

† denotes 1st class Honours.
• denotes 2nd class Honours.
(C) denotes credit in Chemistry.
(B) denotes credit in Biology.

SECOND EXAMINATION

Archibald, D. R. N.
Baird, R. G.
Barlow, R. M. (H)
Billinge, P. R.
Campbell, H. M.
Clarke, Miss C. E. (H)
Cock, E. V.
Davidson, H. J. (H)
Ferguson, A. R. (H)
Fraser, Donald
•Fraser, D. G.
Gaunt, J. L.
Grant, Forbes (H)
Green, W. C. (H)
Guilor, Miss M. (H)
Hands, R. R. (H)
Hayes, H.
Hunt, D. T.
Kermack, N. R.
McAllister, J. (H)
McKay, A. F.
Mitcheson, J. A. J. (H)
Nelson, A. M. R.
Peden, A. B. (H)
Reid, G. S.
•Scoggins, Miss J. M.
Sherratt, R. K. (H)
Shields, W. G. (H)
Spencer, G. A.
Stevenson, R. B. (H)
Stewart, A. F.
Stokoe, W. M.
Taylor, A. R. (H)
Thorne, J. P.
Trainer, P. E.
Vizard, D. J.
Walker, A. I. T. (H)
Weatherill, G. D. (H)
•Windsor, Miss M. D.
Wright, D. (H)

• denotes 2nd class Honours.
(H) denotes credit in Histology.

THIRD EXAMINATION

Adamson, J. D.
Affleck, Harry (A)
Barker, A. M. (P)
Barnes, Joseph
Bowie, J. T.
Browne, V. A. D.
Campbell, R. J.
Cartwright, C. F.
Cheminant, D. A. Le (A) (H)
Couttie, M. A.
Crocker, R. W.
Dakin, G. W.
•Dovey, J. S.
Eddy, Cecil (P)
•Fuller, A. T.
Garrett, T. R.
Goss, C. J.
Griffiths, B. C. R.
Hamilton, W. W.
Harrington, J. L. (A)
Harrison, A. F. (A) (H)
Inness, J. F.
Jacob, M. B.
Lyon, Miss E. C. M.
McCormick, A. N.
Mackie, W. L. (P) (H)
McLaren, A. P. B.
Macleod, Peter (A)
Nelson, J. P.
Norman, T. H. (H)
O'Reilly, K. J. (A)
Proverbs, R. S. (H)
Roberts, A. W.
Ross, I. I.
Scales, Philip (H)
Sellers, R. F. (A) (H)
Smith, V. W.
•Stewart, D. L.
Thoma, J. W.
•Vasey, H. F.
•Wells, Miss A. J.
Wilson, P. G. R.

• denotes 2nd class Honours.
(P) denotes credit in Pharmacology.
(A) denotes credit in Anatomy.
(H) denotes credit in Hygiene.

FOURTH EXAMINATION

Boycott, B. R. (Paras)
Brown, R. D. (Paras)
Chew, S. K.
Duberley, W. R.
Duguid, I. M.
Edgar, J. T. (Paras)
•Fisher, E. W.
Fleming, Miss H. E.
Forrest, W. T.
Greig, Norman
Harris, A. H.
Hiscock, R. H.
Hutchinson, H. L.
•Kidd, J. N.
Leslie, P. G.
McFerran, W. H.
Mackenzie, C. P.
Maclennan, D. J.
Macqueen, A. C. W. E.
Mallalieu, J. M.
Menon, M. N.
Mitchell, Douglas
Moore, Duncan (Paras)
Ormiston, T. T. (Paras)
Palmer, R. H. F. (Paras)
Pette, F. D.
Phillips, A. P. (Paras)
Philp, G. I.
Robertson, A. G.
Sutherland, Miss A. M. (Paras)
Tremlett, J. G. (Paras)
Turnbull, A. S.
Turnbull, J. M.
Tweedale, O. L.
Watt, D. J.
Whitelaw, Alexander

• denotes 2nd class Honours.
(Paras) denotes credit in Parasitology.

FINAL EXAMINATION

Ash, R. W.
Barr, McLeod (M)
Borthwick, Ramsay
Brown, A. J.
Brown, T. C.
•Burrows, Robert
Campbell, E. A.
Caufield, William
Craig, W. A.
Davies, J. C.
Duguid, H. I.
Earnshaw, D. G.
Evans, T. D.
Falconer, John
Fraser, C. D.
Fraser, Gordon (S)
Gilling, G. H. C.
Gitter, M. (M)
Gonzales, F. O.
Gruchy, C. L. (M)
Hallam, C. W.
Huck, R. A.
Hurrell, A. D.
Jackson, Mrs. E. K. M.
McCallum, Gordon
Macaulay, Malcolm
Mackay, J. M. K.
Maclennan, Walter
Madden, D. H. L.
Martin, R. D.
Mitchell, Miss H. M.
Mitchell, J. R.
Morris, Miss E. K.
Morton, K. E.
Newsam, I. D. B. (M)
Owen-Pawson, D. D.
Penman, J. H.
Rankin, J. E. F. (M)
Rashid, Ahmed
Richardson, Robert
Scrivens, G. W.
Sloan, W. H.
Slinger, Gerald
Smith, A. G.
Thompson, B. R.
Trought, V. P. T.
Warnes, W. R. J.
Young, D. W. (M)

• denotes 2nd class Honours.
(M) denotes credit in Medicine.
(S) denotes credit in Surgery.

Glasgow:

SECOND EXAMINATION

Buchanan, J. M.
Hutchison, James
Loudon, A. J. B.,
Martin, Miss H.
Torrance, D. S.
Watson, J. M.

THIRD EXAMINATION

Bickerton, D. T.
Borland, H. A.
Brown, P. R. M.
Calder, H. A. Mc
Cocozza, G.
Cruickshank, George
Cullen, R. G. (H)
Ferguson, Angus (A)
Gibb, J. A. (A) (H)
Hamilton, R. C.
Johnston, W. S.
Lyon, Miss B. E.
McCready, P. H.
McCusker, H. B.
Mackenzie, Alexander (A) (H)
McNair, R. C.
Orr, Miss M.
Prydie, John
Rawlins, J. A.
Seawright, David (A)
Spy, G. M.
Thom, Alasdair
Taylor, J. L.
Tudhope, K. M.

(A) denotes credit in Anatomy.
(H) denotes credit in Hygiene.

FOURTH EXAMINATION

Agnew, J. H. (Paras)
Anderson, C. C.
Armour, James
•Bent, C. L.
Bunyan, F. S. R.
Cameron, Miss M. C.
•Emmett, F. McL.
Gilchrist, Miss M.
Howat, A. N. H.
Howat, W. P.
Hutchison, Michael
Hyatt, Miss J. M.
King, J. G.
Kyle, David
Macleod, A. J.
Macpherson, Robert

McPhee, A. A.
Mann, Miss E. M.
Mundell, David
Nicolson, T. B. (Paras)
Ommer, F. G.
Parkyn, D. R.
Renton, Miss J. P.
Sanderson, John
Smith, Dr. M.
Stanhope, D. T.
Steel, E. R.
Thompson, J. D. (Path)
Walls, T. J. R.
Weipers, Mrs. M.
Young, D. K. M.

(Paras) denotes credit in Parasitology.
(Path) denotes credit in Pathology.

FINAL EXAMINATION

Asher, R. A.
Baird, N. D.
Barton, D. J.
Black, A. McC.
Broom, T. M. (M)
Bugiel, H. L.
Callow, Michael
Doyle, Joseph
Duncan, George
Gibson, Robb
Goalen, H. McN.
Hall, T. P.
Harkness, A. C.
Isbister, James
Lawson, R. B.
Louden, A. J. B.
McCulloch, Buchanan
McDonald, A. W.
Macdonald, I. S.
McNair, A. J.
Madden, Edward
Murray, G. D.
Parker, F. J.
Pronger, Mrs. F. M. (M)
Scott, W. N.
Smith, J. McS.
Sothern, J. M.
Spiers, A. G.
Strang, J. R.
Watkinson, D. E. (M)
White, Miss C. H.

(M) denotes credit in Medicine.

Dublin:

FIRST EXAMINATION

Barry, K. T.

SECOND EXAMINATION (*One Subject*)

Abrahamson, D. (A)
Ballesty, J. J.
Broderick, T. I.
Chapman, W. R.
Cullen, R. G.
Daly, Edward
Deboys, D. C.
Deeney, E. E.
Dowdall, F. J.
Driscoll, C.
Dunne, L. G.
Fenlon, P. J.
Flavin, M. J.
Fogarty, W. D.
Foley, J. E.
Goold, M. C. (A)
Gordon, James
Guerin, W. A.
Guven, M. N. (A)
Hally, W. P.
Hannan, John
Harboard, R. S. (A)
Hartigan, P. J.
Henehan, M. D.
Houlihan, T. V.
Jameson, J. G.
Johnson, R. E. (P)
Keane, P. A.
Kent, Martin
Liffey, P. K.
Littlewort, M. C.
Lynch, J. J.
McDonald, P. J.
Mackessy, E. J.
Marsh, J. H.
Noonan, J. D.
O'Brien, M. W.
O'Keefe, D. J.
Quirke, J. M.
Rhatigan, Patrick
Sheridan, J. J.
Smyth, L. J. F.
Strickland, K. L. (A)
Toolan, G. A.
Twomey, Thomas
Tuite, M.
Tynan, A. R.
Walsh, M. C.
White, J. J.

(P) denotes credit in Physiology.
(A) denotes credit in Anatomy and Histology.

THIRD EXAMINATION (*Both Subjects*)

McCarthy, Patrick

Hygiene only

Butler, G. M.
Gallery, G. J.
Gilchrist, E. W.
Harte, J. E.
Hatch, Charles
Kelly, E. J.
Lee, David
Linton, J. A. M.
McAuley, B. F.
McCarthy, James
McGinley, M. D.
Mooney, F. M.
Mulligan, T. D.
Murphy, O. J. N.
O'Connell, D. F.
O'Donnell, Owen
O'Dowd, P. W.
O'Hara, D. P.
O'Rourke, Daniel
Scott, W. A.
Tubridy, T. J.
Wright, M. L.

Pathology only

Burke, J.
Clarke, J.
Coghlan, D. P.
Cosgrove, J. S.
Dexter, E. d'H.
Dougan, P. D.
Fitzmaurice, T. G.
Gallagher, Eugene
Glazier, D. B.
Hart, Francis
Hatch, John
Kirkpatrick, R. W.
McLoone, A. G.
Mills, D. R.
Murphy, P. A.
Petris, M. A. (Credit)
Rogers, E. P. S.
Ruane, E. J.
Waddell, A. R.

FOURTH EXAMINATION (*Old Syllabus*)

Beirne, J. P.
O'Brien, M. G.

FINAL EXAMINATION (*Old Syllabus*)

Beatty, Miss O. M.
Downey, M. E.
Keenan, N. T.
Reihill, J. P.
Reilly, Raymond
Simpson-White, Mrs. S.

FINAL EXAMINATION (*Revised Syllabus*)

Barnes, Michael
Blake, J. W.
Carroll, J. A.
*Davies, S. F. M.
Dowling, V. A.
Fitzpatrick, E. P.
Forde, D. M.
Hanly, S.
Hogan, Michael
Keatinge, J. P. (M)
Knightly, J. C.
Lyons, P. J.
McGarry, W. V.
Mehigan, Cormac
O'Driscoll, J. G.
Sheehan, G. T. M.

* denotes 2nd class Honours.
(M) denotes credit in Medicine.

London:

FIRST EXAMINATION

Archer, F. R.
Coryn, H. D.
De Marigny, M. J. C. D. (C)
Dier, B. G. F.
*Evans, E. D.
Gray, C. G.
Hudson, J. R. (C)
Hyde, Miss K. B.
Kerry, J. B. (C)
*Lifton, J. M.
McCracken, R. W.
Markham, Keith (C)
Melluish, H. K.
Millar, J. A. (C)
Parkinson, K. D. (C)
Peters, J. B.
Prole, J. H. B. (C)
Rawson-Shaw, Miss E. A.
Strang, R. D. (C)
Taylor, E. L. G. (C)
Thorp, A. C. B.
Valentine, E. P.
Walls, L. J. T.
Williamson, D. C. (C)
Wright, M. A.

* denotes 2nd class Honours.
(C) denotes credit in Chemistry

SECOND EXAMINATION (*One Subject*)

Abraham, B. F.
Alexander, T. J. L.
Ansell, R. H.
Arnold, J. H. S.
Baldwin, I. J.
Barton, C. R. Q.
Basinger, Donald
Beddows, A. C. L.
Beesley, C. J. (A)
Benbow, G. M.
Booker, J. C.
Breese, J. L.
Brocklesby, D. W. (A)
Buxton, Peter
Bywater, J. E. C.
Cansfield, C. J.
Cawthorne, W. N.
Cox, J. A. (P)
Dommett, D. J.
Downes, J. E.
Eden, R. M. G.
Fry, N. C.
Gibson, F. E. T.
Hammond, Miss W. M.
Hampshire, F. J. W.
Hawkins, Albert
Hayes, T. J.
Holmes, I. R.
Holmes, R. G.
Hullis, Roy
James, P. H.
Jones, T. H.
Kearns, M. P.
Keep, M. E.
King, D. K.
Levens-Ing, Miss P. J.
Loving, Charles
McVoy, K. I.
Maynard, H. M. F.
Mears, R. H.
Millar, R. O.
Morgan, D. B.
Nelson, D. G.
Nelson, G. J.
Nestel, B. L. (A)
Olorenshaw, P. H. (A)
Roberts, D. H.
Russell, G. H.
Shaw, D. L.
Simons, M. A. P.
Skipsey, Roger
Smith, Miss L. C.
Stalbow, Michael
Stockwell, G. D.
Swann, A. I.
Taffs, L. F. (P)
Thomas, C. J.
Thursby-Pelham, R. H. C.
Tiffin, R. B.
Tuckey, J. B.
Vinsen, M. A.
Vinycomb, Miss H. M.
Waller, J. F.
Walter, A. J. (A)
Wells, J. R.
White, R. C. (P)
Williams, J. R. L.

(P) denotes credit in Physiology.
(A) denotes credit in Anatomy and Histology.

THIRD EXAMINATION (*Hygiene only*)

Barnsley, D. G. C.
Berry, D. M.
Carnaghan, R. B.
Dickens, P. S. E. M.
Ford, G. R.
French, P. J.
Govaerts, L. V.
Herbert, W. J.
Keymer, I. F.
Langford, S. H.
Larkin, P. J.
Manton, V. J. A.
Monks, R. W. M.
Redmond, M. R.
Rees, R. B.
Tucker, Miss J. W.
Whitaker, J. L.

Pathology only

Ayliffe, J. H.
Bennett, P. H. G.
Blyth, A. M.
Bouvet, Roger
Brunsdon, J. R.
Bunting, Miss J. A.
Choudhury, M. U. A.
Christie, E. J.
Clark, J. H.
Cook, W. R. (Credit)
Dent, H. H.
Evans, H. L.
Garland, Miss M.
Haggis, I. H.
Hay, I. F. S.
Hoddinott, R. P. F.
Howe, W. T.
Jack, J. A. G.
James, T. M.
Jones, W. G. (Credit)
Laing, P. W. (Credit)
McMillan, D. D.
Marston, J. R. T.
Moore, D. W. W.
Napier, Miss E. E. W.
Needham, N. S.
Norman, J. A.
Orfeur, N. B.
Payne, J. M. (Credit)
Robinson, J. S.
Rossdale, P. D.
Sherwood, J. E. T.
Shipley, William
Silver, I. A. (Credit)
Skinner, D. J.
Swift, G. A.
Tinslay, Miss P. E.
Wheeler, J. M.
Wiltshire, L. V.
Wood, K. H. B.
Piatkowski, E. L. (By-law 95)
Pillai, C. P. (By-law 95)

FINAL EXAMINATION

Ahmad, Alauddin
Bailes, Miss J. A.
Ball, Miss J. B.
Bevan, T. G.
Brockis, D. C.
Colegrave, A. J.
Cooper, B. S.
Creyke, G. H.
Cripps, J. H. H.
Crooks, J. L. (M)
Davies, A. J.
Dring, J. C.
Edwards, Miss Barbara
Faull, W. B.
Felgate, C. A. G.
Fowler, N. G.
Fumpston, W. A.
Hawksley, M. B.
Hoe, Miss C. M.
Holcombe, R. B.
*Howell, D. G.
Hutchings, D. A.
Johnson, Miss P. L.
Jones, B. V.
*Jones, I. I.
Jull, D. J.
Mace, J. W.
Rees, W. H. G.
Rham, G. G.
Sainsbury, D. W. B.
Shattock, Gordon
Simpson-White, J. N.
Stokes, Simon
Taylor, J. H.
Thomas, W. B.
Thoumine, R. H.
Waters, P. J.
Wickenden, P. F.

* denotes 2nd Class Honours.
(M) denotes credit in Medicine.

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UNIVERSITY OF EDINBURGH B.Sc. IN VETERINARY SCIENCE

List of Successful Candidates

The following Members of the Royal College of Veterinary Surgeons graduated B.Sc. in Veterinary Science at the University of Edinburgh on July 5th, 1951:—

Ash, Roderick William
Barr, Macleod
Brown, Alexander James
Burrows, Robert
Campbell, Eldon Alexander
Caufield, William
Duguid, Harry Innes
Earnshaw, Desmond Gilbert
Fraser, Charles Donald
Fraser, Gordon
Gonzalez, Frank Oswald, B.SC. (McGill)
Gruchy, Charles Leonard
Hallam, Charles William
Huck, Ronald Ashley
Jackson, Mrs. Elizabeth Katharine Marion
Macaulay, Malcolm
McCallum, Gordon
Martin, Robert Donald
Morris, Miss Edna Kathleen
Penman, James Honeyman
Rankin, John Ernes: Fitzgerald
Scrivens, Graeme William
Sloan, William Hay
Thompson, Barry Roland
Trought, Vincent Paul Trevor, M.A. (Cantab.).
Williamson, Philip Taylor

NOTES AND NEWS

Diary of Events

July 21st.—Meeting of the Biochemical Society, in the Department of Biochemistry, University of Sheffield, 10.30 a.m.

July 25th.—Summer Meeting of the Lancashire Division, N.V.M.A., at the A.I. Centre, Tilston, Tarporley, at 2.30 p.m., after an informal lunch in Chester at 12.45 p.m.

July 25th.—Meeting of the Editorial Executive, N.V.M.A., 2.30 p.m. (*Members please note alteration from second to fourth Wednesday, for this month only.*)

July 25th.—Summer Meeting of the Lancashire Division, N.V.M.A., at the A.I. Centre, Tilstone Fearnall, Tarporley, 2.30 p.m.

July 27th.—Summer Meeting of the Yorkshire Division, N.V.M.A., at Harrogate. (See Notice.)

Aug. 9th.—Annual General Meeting of the Lincolnshire and District Division, N.V.M.A., at Lincoln (Saracen's Head Hotel), 2.15 p.m.

Sept. 23rd-29th.—Sixty-ninth Annual General Meeting and Congress of the National Veterinary Medical Association, at Eastbourne.

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PERSONAL

Births.—BROWN.—On July 8th, 1951, to Evelyn (*née* Westgarth), wife of Alexander Brown, M.R.C.V.S., of Laburnum House, Kirkoswald, Penrith, a son—Alexander Stuart.

CASE.—On July 9th, 1951, at Gwyn Mor Nursing Home, Cardiff, to Joan (*née* Farman, M.R.C.V.S.) and Robert Case, a brother for Rowena and Jonathan—Nicholas Jocelyn.

HAYES.—On July 8th, 1951, to Joan (*née* Gilbert) and Harry Hayes, Leicester Road, Hinckley, Leicester, a fourth son—James Andrew.

LEWIS.—On June 13th, 1951, at 99, High Street, Rochester, to Sheila, wife of D. G. Lewis, M.R.C.V.S., a daughter—Marion.

SUMNER.—On July 2nd, 1951, to Olive (*née* Jones), wife of K. C. Sumner, M.R.C.V.S., 28, St. Paul's Road, Clifton, Bristol, 8, a son—David Cummings.

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R.C.V.S. OBITUARY

METTAM, Richard William Morison, O.B.E., M.SC., M.R.C.V.S., late Capt. R.A.V.C., formerly Assistant Director of Laboratory Services, Nigeria. Graduated Dublin, July 17th, 1917. Died at Lanark, Scotland, July 11th, 1951.

We record above with much regret the death of Mr. Richard W. M. Mettam, who was the eldest son of the late Professor E. A. Mettam, Principal of the Royal Veterinary College of Ireland. Further reference will be made in an early issue.

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WORLD POULTRY CONGRESS, PARIS, AUGUST, 1951

United Kingdom Delegation

His Majesty's Government has accepted an invitation from the French Government to send a delegation from the United Kingdom to the Ninth World's Poultry Congress which is being held in Paris in August of this year.

Dr. Alan Greenwood, D.SC., PH.D., F.R.S.E., Director of the Poultry Research Council, Edinburgh, will be the leader of the delegation. The other members are: Sir Thomas Dalling, D.SC., M.A., F.R.C.V.S., F.R.S.E., Chief Veterinary Officer, Ministry of Agriculture and Fisheries; Dr. R. Coles, M.SC. (ECON.), M.SC. (AGRIC.), B.A., PH.D., Chief Poultry Advisory Officer, Ministry of Agriculture and Fisheries; Miss M. M. MacLeod, N.D.D., C.D.D., Senior Poultry Inspector, Department of Agriculture for Scotland; Dr. J. G. Rhynehard, M.SC., F.R.SC.I., D.I.C., N.D.A., Deputy Chief Inspector, Ministry of Agriculture for Northern Ireland; Mr. J. C. Parkinson, Assistant Director, Eggs Division, Ministry of Food; Mr. K. L. Richards, Livestock Officer, Department of Agriculture, Cyprus; Mr. J. C. Holland, Major Ian Macdougall, O.B.E., Mr. Philip Shaw, Mr. Stanley Street-Porter, O.B.E., and Mr. R. Chalmers Watson, Representatives of the British National Committee of the Ninth World's Poultry Congress, and Alderman E. G. Gooch, C.B.E., J.P., M.P., President of the National Union of Agricultural Workers.

ADDRESSES OF DISEASE-INFECTED PREMISES

The list given below indicates, first, the county in which are situated the premises on which disease has been confirmed, followed by the postal address and date of outbreak.

Swine Fever:

Derbys.—Rock Villa, Worksop Road, Mastin Moor, Chesterfield (July 11th).

I. of Ely.—199, Norwood Road, March (July 9th).

Norfolk.—Piggeries at Banyer Hall Farm, Ladies Drove, Emneth, Wisbech (July 9th).

Lancs.—Moorland Farm, off Rindles Road, Astley (July 13th).

Staffs.—Clydesdale, Balwin Gate, Newcastle; Common Farm, Whitemore (July 11th); Ironside Road Farm, Chase Terrace, Walsall (July 13th).

Stirling.—Alton of Bandeath, Fallin, Stirling (July 9th).

Suffolk (E.).—Street Farm, Mendham Harleston; Bridge House, Bridge Street, Halesworth (July 9th).

Yorks (E.R.).—Delapole Hospital Farm, Willerby, Hull (July 11th); Pasture House Farm, Sigglesthorne (July 13th).

Yorks (W.R.).—Hall Green Farm, North Rigton, Huby, Leeds; Piggeries rear Windmill Terrace, Royston, Barnsley (July 13th).

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ANTHRAX IN NORTHERN IRELAND

Minister's Statement on Ulster's "Most Serious Outbreak"

The Rev. Robert Moore, Minister for Agriculture, replying in the Ulster House of Commons to Mr. Faulkner (U.E. Down), said there was no provision under the Diseases of Animals Acts for the payment of compensation to the owners of the animals which had died of anthrax in the recent unprecedentedly severe outbreak in Northern Ireland. Compensation under the Acts was paid only where compulsory slaughter was carried out to prevent the spread of disease, and such circumstances did not arise in outbreaks of anthrax.

The Minister said that he would like to disabuse the member of the idea that there was any such thing as slaughter in connection with anthrax. An animal affected might appear to be in perfect health in the evening and might be lying dead in the morning. There was no compulsory slaughter, as in the case of foot-and-mouth disease and advanced stages of tuberculosis.

The Minister said that the recent outbreaks of anthrax had been the most serious experienced in Northern Ireland, and had naturally been the subject of grave concern to his Ministry. Each outbreak had, of course, been dealt with promptly in accordance with the provisions of the Anthrax Order made under the Diseases of Animals Acts. Every animal which had died of the disease had been buried and thorough disinfection of the affected premises carried out under the supervision of a veterinary officer of his Ministry.

Mr. Faulkner, he added, would realise that since outbreaks of anthrax were sporadic it was a matter of great difficulty, if not an impossibility, to take steps to prevent cases arising as he suggested. The spread of the disease was, however, normally due to animals coming into contact with infected material. Great efforts had, therefore, been made to trace any possible source of infection, and considerable quantities of material had been destroyed as a precautionary measure.

Mr. Moore said that his Ministry had no responsibility whatever for the procurement or importation of feeding-stuffs. They mainly acted for the Ministry of Food, who disclaimed absolutely any responsibility in this connection. He hoped that an outbreak of the same magnitude would not occur in the lifetime of any of them again. But if anything were to be done—and he did not say it was possible to do anything in the way of compensation—then they would need legislation.

Mr. Faulkner asked if the Minister would make representations to the Minister of Food to ensure that farmers were not supplied with feeding-stuffs which were liable to affect their animals.

The Minister said that there was an assumption in the question that the disease was contracted through feeding-stuffs. That had not been proved and he thought it was impossible to prove it.

* * * * *

The number of cattle slaughtered in Britain last year was 1,880,994 compared with 1,534,028 in 1949. Calves numbered 1,329,044 (1,200,941), sheep and lambs 6,611,031 (6,283,219). The total of pigs passing through collecting centres was 1,522,303 (1,206,640), of which 1,236,683 (1,016,578) were despatched to bacon curers and manufacturers and 285,620 (190,062) went to Government slaughterhouses.

CORRESPONDENCE

The views expressed in letters addressed to the Editor represent the personal opinions of the writer only and their publication does not imply endorsement by the N.V.M.A.

CALCIUM SULPHIDE IN THE TREATMENT OF WARTS

Sir,—With reference to the clinical communication in your journal of January 6th, 1951, from Mr. H. Kirk, and further in the issue of January 20th, 1951, from Mr. M. N. Menon and Mr. A. H. Hogg, on persistent buccal warts and their treatment, I should like to relate my experience with the use of calcium sulphide. I have administered the drug orally, which avoids all the difficulties associated with injections mentioned by different practitioners, and also reduces the necessity for surgical interference. I have treated many dogs showing multiple warts in the buccal cavity with calcium sulphide in doses of 1 to 2 grains daily for about three weeks, with the result that all the warts shrivelled and ultimately disappeared completely. I have also used this drug in cutaneous warts of calves in doses of 25 to 35 grains administered by mouth daily. Appreciable decrease in the size of warts was noticed after eight days' treatment and they disappeared in about one month's time. The cases treated did not show any toxic symptoms or any other effect on their general health. So far the recurrence of the warts has not been reported in the cases treated by me.—Yours faithfully, S. J. Khambete, Assistant Professor of Medicine, Bombay Veterinary College, Parel, Bombay. *July 2nd*, 1951.

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HISTORY OF THE ROYAL (DICK) VETERINARY COLLEGE

Sir,—I read Mr. Thomas A. Joynt's history of the "Dick" College, which appeared in *The Scotsman* and which was reprinted in *The Veterinary Record*, and, like your correspondent, Mr. J. E. Wilson, of Lasswade, was amazed that no reference was made to the name of Bradley. I wish heartily to endorse all that Mr. Wilson has said (July 7th issue of *The Record*). To my mind there can be few, if any, in the history of the college who did more to mould the character of the "Dick" graduates than did Dr. Bradley; this, in my view, was due to the fact that during at least the first two years of the veterinary curriculum the students came into daily contact with this great man.—Yours faithfully, H. W. Steele-Bodger, 28, Lichfield Street, Tamworth. *July 16th*, 1951.

[Mr. Steele-Bodger is still in hospital and the receipt of this typically vigorous contribution therefore affords us particular pleasure.—*Editor.*]

DISEASES OF ANIMALS ACT, 1950—GREAT BRITAIN

Summary of Returns of Confirmed Outbreaks of Scheduled (Notifiable) Diseases

Period	Anthrax	Foot-and-mouth	Fowl Pest	Parasitic Mange*	Sheep Scab	Swine Fever
June 16th to 30th 1951	10	—	18	—	—	50
Corresponding period in—						
1950	12	—	6	—	—	14
1949	4	—	36	—	—	—
1948	—	—	16	—	—	3
Jan. 1st to June 30th, 1951	260	18	494	—	4	478
Corresponding period in—						
1950	211	14	87	—	19	22
1949	100	11	285	—	28	5
1948	47	—	206	1	26	20

* Excluding outbreaks in Army Horses.

Tuberculosis (Attested Herds) Schemes

The number of Attested Herds, *i.e.*, herds officially certified as free from Tuberculosis as at June 30th, 1951, was as follows:—

England	Wales	Scotland	Total (Great Britain)
30,294	17,613	14,773	62,680

N.V.M.A. CONGRESS, 1951

Revised Programme

Congress Meetings will be held in the Floral Hall, Winter Garden, Eastbourne

Sunday, September 23rd

EVENING: 8.0. Reception by Sussex and South-Eastern Counties Divisions.

Monday, September 24th

MORNING: 10.0. Civic Opening of Congress by His Worship the Mayor of Eastbourne.
10.30. Opening of Exhibition of Surgical Instruments, Drugs, etc., by the President, N.V.M.A.
11.30. Sectional Meetings.

AFTERNOON: 2.30. *Address*: "Control of Diseases of Livestock: a comparison of methods in different countries and their significance," by Sir Thomas Dalling, M.A., M.R.C.V.S., F.R.S.E., Chief Veterinary Officer, Ministry of Agriculture, followed by an address on the same subject by Dr. L. P. de Vries, Secretary, Animal Health Service, The Hague, Holland; and also by an American contributor.

EVENING: 8.30. Civic Reception, Dance and Cabaret, given by the Mayor and Mayoress of Eastbourne, at the Winter Garden, Devonshire Park, Eastbourne.

Tuesday, September 25th

MORNING: 9.30. *Paper*: "Johne's Disease, its Diagnosis and Control," by Dr. A. W. Taylor, M.R.C.V.S., of Compton. Opener: Mr. H. T. Matthews, B.V.SC., F.R.C.V.S., D.V.H.

AFTERNOON: 2.30. Small Animal Surgery, including X-rays, in the Gas Theatre, Eastbourne, arranged by Mr. Gordon C. Knight, F.R.C.V.S. Ladies' Excursion.

EVENING: 8.30. Reception and Dance given by the President, N.V.M.A., at the Grand Hotel, Eastbourne.

Wednesday, September 26th

MORNING: 9.30. *Paper*: "The Application of Genetics to the Breeding of Farm Livestock," by Professor M. M. Cooper, Wye. Opener: Professor Wm. C. Miller, M.R.C.V.S., F.R.S.E.
12.0. Last meeting of Council 1950/51.

AFTERNOON: 2.30. Congress Photograph.
3.0. Annual General Meeting.

EVENING: 7.30 for 8.0. Annual Banquet, at the Grand Hotel.

Thursday, September 27th

MORNING: 9.30. *Paper*: "The Natural History of Virus Hepatitis of Dogs (Rubarth's Disease)," by Mr. H. B. Parry, B.A., M.R.C.V.S., and Dr. N. M. Larin. Opener: Professor L. P. Pugh, B.SC., F.R.C.V.S.

AFTERNOON: Free for Golf, Tennis, etc.

EVENING: 8.30. Ladies' Guild Dance, at the Grand Hotel, Eastbourne.

Friday, September 28th

MORNING: 9.30. *Paper*: "Parasitic Bronchitis in Cattle," by Dr. E. L. Taylor, M.R.C.V.S., D.V.H., of Weybridge. Opener: Mr. J. W. Bruford, M.R.C.V.S.

AFTERNOON: 2.30. Large-animal Surgery Demonstrations at the Wellcome Veterinary Research Station, Frant, Nr. Tunbridge Wells.

1. Films—shown by Mr. J. McLintock, M.R.C.V.S.
2. Rumenotomy—by Mr. K. Stuart, M.R.C.V.S.
3. Dishorning—various methods to be demonstrated.
4. Demonstration of Certain Methods for the Evaluation of Bull Semen—by Mr. J. L. Hancock, M.V.SC., M.R.C.V.S.

Ladies also invited to visit Frant, where special arrangements will be made for their entertainment.

EVENING: Dance given by the Grand Hotel.

Saturday, September 29th

MORNING: 10.0. Closing Meeting of the Congress, followed by
First Meeting of 1951/52 Council, N.V.M.A.